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EXAMINER	
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2467	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/568,346	IKAWA ET AL.	
	Examiner	Art Unit	
	YOSIEF BERHANE	2467	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 October 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,11-13 and 15-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,11-13 and 15-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/15/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. **Claims 1, 11-13, 15-26** have been examined and are pending. Claims 2-10 and 14 have been cancelled.

2. ## Response to Arguments:

3. On Page 13 of applicants response, regarding claim 1, applicant argues: By contrast with the Internet protocol systems, in the system of independent claim 1, the roadside-to-vehicle communication requires "a non-network-type protocol." Thus, the system set forth in claim 1 expressly does not rely on the IP/TCP standard, thereby eliminating the overhead caused by the IP/TCP connections. Neither ARIB STD-T75 nor Delaney suggests dispensing with that IP/TCP standard. Therefore, claim 1 is patentable over the combination of ARIB STD-T75 and Delaney so that, upon reconsideration, the rejection should be withdrawn as to claims 1, 11-13, 15, and 17

4. On page 14 of applicant's response, regarding claim 19, applicant argues that "the combination of ARIB STD-T75 and Fite fails to teach at least the "non-network protocol" feature of amended claim 19. The system defined by claim 19 does not use network connections between the mobile and base stations.

5. Further, on page 14, applicant argues, regarding claim19; "each packet is transmitted through a point-to-point connection (or a broadcast connection), which does not use intermediate switching as described in Fite. Since that intermediate switching is essential to Fite, the combination of ARIB STD-T75 and Fite fails to render amended claim 19 obvious."

6. **The applicant's arguments pertaining to "a non-network protocol" are persuasive but moot in light of new rejection.**

7. The applicants arguments regarding the combination of ARIB STD-T75 and Fite failing to teach or suggest "each packet transmitted through a point-to-point connection (or a broadcast connection" are not persuasive for the following reason:

8. Claim 19 does not recite: "each packet transmitted through a point-to-point connection (or a broadcast connection", therefore the applicant is arguing subject matter not disclosed in the claims, and thus the arguments are not persuasive.

9. ***Claim Rejections - 35 USC § 112***

10. **The following is a quotation of the second paragraph of 35 U.S.C. 112:**

11. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. **Claim 1, 11-13, 15-26** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

13. **As per claim independent claims 1 and 19**, applicant recites "based on a non-network protocol". The applicant does not specify clearly what the limitation "based a non-network protocol" is signifying in the claim. The term is vague and can be interpreted to mean a variety of things, for instance, a non-IP/TCP layer protocol, a non-Application layer protocol, a non-OSI modeled protocol, or a protocol that is not designed for or intended to be implemented in a communication network environment. Therefore, independent **claims 1, 11-13, 15-22** are rejected for being indefinite.

14. **As per claim 23,** applicant recites "non-TCP port", wherein the applicant does not specify clearly what type of non-TCP port is used. Reciting a non-TCP port renders the claim indefinite and vague because it is not determined what type of port the applicant is claiming, for instance, a non-TCP port may be a UDP port, also, a non-TCP port may be a port associated with ATM frame relay, Token Ring, RFComm, AppleTalk, or Audio/Video streaming, etc. Further clarification is needed to understand the invention as recited in claim 23; therefore, independent **claim 23-26** are rejected for being indefinite.

15. **The following is a quotation of the first paragraph of 35 U.S.C. 112:**

16. The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

17. **Claim 23-26** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 23, applicant recites "a first non-TCP port" and "a second non-TCP port", wherein the specification do not disclose a first and second non-TCP ports, rendering the claims to comply with written description requirements. Therefore, **claims 23-26** are rejected.

18. ***Claim Objections***

Claims **1, 11-13, 15-26** are objected to because the applicant recites sending/receiving means where it is not understood whether the forward slash "/" is used to denote the following: "and" "or" "and/or". Appropriate correction is required.

19. ***Claim Rejections - 35 USC § 103***

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

21. (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

22. **Claims 1, 11-13, 15, 17 and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Non-patent Literature "Dedicated Short-Range Communication System, ARIB STANDARD, Version 1.0" (hereinafter referred to as "ARIB STD-T75"), and NPL document DSRC International Task Force (hereinafter DSRC ITS.) published December 11, 2002 as well as Publication 2004/0017820 to Garinger et al. (hereinafter Garinger).

23. **As per claim 1**, ARIB STD-T75 teaches a communication system including (In sections, 2.3.2.1 and 2.3.1.1, the ARIB STD-T75 discloses multiple applications and services of a communication system. See also 2.1.1, 2.1.2 and 2.1.3. The communication system consists of an road side unit which is installed at the road side and an On-Board Equipment (OBE) which is installed in the vehicle.):

24. a plurality of mobile stations (In sections, 2.3.2.1 and 2.3.1.1, the ARIB STD-T75 discloses a communication system consisting of On-Board Equipment installed in vehicles (claimed mobile stations). See also 2.1.1, 2.1.2 and 2.1.3);

25. and a base station system communicating with the mobile stations (sections, 2.3.2.1 and 2.3.1.1, the ARIB STD-T75 discloses a road side unit (Claimed base station). See also 2.1.1, 2.1.2 and 2.1.3)

26. and providing the mobile stations with a plurality of application services (In sections, 2.3.2.1 and 2.3.1.1, the ARIB STD-T75 discloses multiple applications and services that the communication system is able to manage),

27. through communication between the mobile stations, which travel on a road (In sections, 2.3.2.1 and 2.3.1.1, the ARIB STD-T75 discloses a communication system consisting of On-Board Equipment installed in vehicles (claimed mobile stations). See also 2.1.1, 2.1.2 and 2.1.3)

28. and the base station system, which is installed along the road (sections, 2.3.2.1 and 2.3.1.1, the ARIB STD-T75 discloses a road side unit (Claimed base station). See also 2.1.1, 2.1.2 and 2.1.3),

29. wherein each of the mobile stations and the base station system comprises a transfer service processing entity implementing data transfer among the plurality of applications (Fig 4.4.1.2.1, ARIB STD-T75 discloses a layer 7 structure for the data transfer service where a Transfer Kernel element (claimed transfer processing entity) is used for data transfer services. Note, as disclosed in section 4.4.2, the layer 7 kernel provides services realized by the kernel elements needed to support several applications),

30. wherein the transfer service processing entity identifies an application, with one of the mobile stations and the base station system as a sending source (Section 4.4.2.1.2, ARIB STD-T75 discloses that a transfer kernel element (claimed transfer service processing entity) offers its services by means of service primitives, which includes a GET primitive, where as disclosed in 4.4.3.4.1, the GET primitives results in the retrieval of information from a peer application on the base station/mobile station side.)

31. from among the plurality of applications (section 4.4.2, the layer 7 kernel provides services realized by the kernel elements needed to support several applications),

32. and a transaction management entity for providing unidirectional data transmission and request-response transaction services (In sections 2.4.2, as well as 3.2.7: ARIB STD-T75 discloses the methods of data transmission which includes a one way, half-duplex communication. Furthermore, in section 2.5.1, ARIB STD-T75 discloses that a "MAC Sub-Layer, Layer Management Entity (LME) and System Management Entity (SME) of Layer 1 are used to exchange and manage service primitives of each layer. Note that service primitives are used to exchange request/response type communication. A list of service primitives are disclosed in section 4.4.3.2),

33. and an identifier designated by and identifying a respective application of the plurality of applications (section 4.2.4.2.1.7, in which ARIB STD-T75 discloses that application identifiers are designated by applications in order to specify the types of application services provided from a base station.),

34. and the transaction management entity comprising: includes undelivered data segment resending means, for resending undelivered data segments of a message (In section 2.5.1.2, ARIB STD-T75 discloses the features of the Layer 2 structure that is adopted from the OSI model. In Layer 2, which includes the MAC Sub-layer, a service to resend data is provided. Also see, 2.5.2, under the heading, Communication Phase.),

35. data sending/receiving means for sending and receiving each message of a plurality of messages (In section 2.5.1.2, ARIB STD-T75 discloses the features of the Layer 2 structure that is adopted from the OSI model. In Layer 2, which includes the MAC sub-layer, a service to establish a link connection is provided (Association phase) to allow a base station and a mobile station to send and receive data. Also see, 2.5.2, under the heading, Association phase and Communication Phase.),

36. and message segmenting/assembling means for segmenting a message generated by an application into a plurality of data segments and assembling a plurality of data segments of a message into the message (Page 295, ARIB STD-T75 discloses that a fragmenting function is performed by the transfer kernel element of the layer 7 (claimed application) to map (claimed assemble) one transfer-SDU on plural LSDU (claimed into message)).

37. ARIB STD-T75 does not disclose expressly: communication based on a non-network protocol

38. DSRC-ITS, on page 7 and 9 discloses that a Road-Side Unit (claimed base station) and an On-Board-Equipment (claimed mobile station) communicate using a Local Port Control (claimed non-network protocol). Also see page 5.

39. ARIB STD-T75 and DSRC-ITS are analogous art because they are from similar fields of endeavor dealing specifically with managing communications between mobile stations and base stations.

40. At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the system of ARIB STD-T75 by communicating based on non-network protocols

41. The rationale would have been to enhance reliability and flexibility for communicating between mobile and base stations by providing control functions and interfaces for a variety of applications including non-IP connections (page 5, DSRC-ITS).

42. Therefore it would have been obvious to combine DSRC-ITS with ARIB STD-T75 for the benefit of enhancing flexibility and reliability in interfacing with a variety of applications.

43. Although the combination of ARIB STD-T75 and DSRC-ITS discloses a transaction management entity (Section 2.5.1, ARIB STD-T75 discloses that a MAC Sub-Layer, Layer Management Entity (LME) and System Management Entity (SME) of Layer 1 are used to exchange and manage service primitives of each layer)

44. and communications between a mobile station and the base station system (In sections, 2.3.2.1 and 2.3.1.1, the ARIB STD-T75 discloses a communication system consisting of On-Board Equipment installed in vehicles (claimed mobile stations) and a Road-Side unit (claimed base station). See also 2.1.1, 2.1.2 and 2.1.3)

45. The combination of ARIB STD-T75 and DSRC-ITS do not disclose expressly: utilizing port numbers and identifying a unit of a transaction utilizing a transaction ID uniquely identifying a corresponding port number

46. Paragraph 0130, Garinger discloses using transaction IDs, wherein a transaction ID uniquely identifies each transaction by combining the source port address (claimed port number) with the ID. Note, a transacaction ID combines the ID with the source port address, thus the transaction ID's will identify the port.

47. ARIB STD-T75, DSRC-ITS and Garinger are analogous art because they are from the same field of endeavor, dealing specifically with managing communications between a source and destination.

48. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the combination of ARIB STD-T75 and Garinger, by utilizing transaction ID's and port numbers for communication, as suggested by Garinger.

49. The rationale for doing so would have been providing reliable communication by ensuring that out of order data transactions between a source and destination are processed and managed appropriately (Paragraph 0128, Garinger).

50. Therefore, it would have been obvious to combine Delaney with Garinger and ARIB STD-T75 for the benefit of providing reliable communication among a source and destination, to obtain the invention as specified in claim 1.

51.

52. **As per claim 11**, the combination of ARIB STD-T75, DSRC-ITS and Garinger teach wherein the transaction management entity of a sending station, of the mobile station and the base station system, divides a message into a plurality of data segments (In section 4.3.1.2.1, ARIB STD-T75 discloses the features of the MAC sub-layer, a service for fragmenting/assembling data is disclosed.)

53. and adds to each of the data segments the transaction ID corresponding to the respective port number (Paragraph 0022, Delaney discloses a connection between a client and a server is uniquely identified via an identifier of the connection including the IP addresses and TCP port numbers of the client and server. The connection may include multiple transactions of requests. Each transaction is identified by a transaction identification number that identifies a unique transaction between the client and server.)

54. and one of sequential numbers for transaction identification (In section, 4.2.4.2.2.1.3, ARIB STD-T75 discloses where sequence numbers are used to prevent duplicated messages)

55. and sends the message as the plurality of data segments (Fig 4.4.1.2.1, ARIB STD-T75 discloses a layer 7 structure for the data transfer service where a Transfer Kernel element (claimed transfer processing entity) is used for data transfer services.)

56.

57. with the transaction ID (Paragraph 0022, Delaney discloses a connection between a client and a server is uniquely identified via an identifier of the connection including the IP addresses and TCP port numbers of the client and server. The connection may include multiple transactions of requests. Each transaction is identified by a transaction identification number that identifies a unique transaction between the client and server.)

58. and sequential numbers (In section, 4.2.4.2.2.1.3, ARIB STD-T75 discloses where sequence numbers are used to prevent duplicated messages),

59. and the transaction management entity of a receiving station, of the mobile stations and the base station system, reassembles the message sent (In section 4.3.1.2.1, ARIB STD-T75 discloses the features of the MAC sub-layer, a service for fragmenting/assembling data is disclosed)

60. by combining the data segments (In section 4.3.1.2.1, ARIB STD-T75 discloses the features of the MAC sub-layer, a service for fragmenting/assembling data is disclosed)

61. having identical transaction IDs (Paragraph 0022, Delaney discloses that each transaction is identified by a transaction identification number that identifies a unique transaction between the client and server.),

62. in an order based on the sequential numbers (In section, 4.2.4.2.2.1.3, ARIB STD-T75 discloses where sequence numbers are used to prevent duplicated messages).

63. **As per claim 12**, the combination of ARIB STD-T75, DSRC-ITS and Garinger teach wherein the transaction management entity, in dividing a message into data segments (In section 4.3.1.2.1, ARIB STD-T75 discloses the features of the MAC sub-layer, a service for fragmenting/assembling data is disclosed),

64. controls duration between transmissions of data segments, depending on status of a sending queue in a lower layer (In Section 4.4.6.3, ARIB STD-T75 discloses where the layer 7 shall inquire about the state for transmission in layer 2. Layer 7 will transmit data or wait depending on the status of layer 2. Also see fig. 4.4.6.3 "Data with priority transfer sequence").

65. **As per claim 13**, the combination of ARIB STD-T75, DSRC-ITS and Garinger teach wherein, when the transaction management entity of a receiving station, of the mobile stations and the base station system, receives a final data segment of the message, the transaction management entity of the receiving station notifies the transaction management entity of the sending station of the sequential numbers of any undelivered data segments (In Section 4.3.3.5.2.1.2.1, ARIB STD-T75 discloses a retransmission procedure, in which a transmitting station does not receive an ACK from the receiving station. In such a process, the retransmission is carried out for the sequence number affixed to the fragmented segments. The retransmission is carried out until the ACK for the last fragment has been received),

66. and the undelivered data resending means of the transaction management entity of the sending station resends only the undelivered data segments (In Section 4.3.3.5.2.1.2.1, ARIB STD-T75 discloses a retransmission procedure, in which a transmitting station does not receive an ACK from the receiving station. In such a process, the retransmission is carried out for the sequence number affixed to the fragmented segments. The retransmission is carried out until the ACK for the last fragment has been received).

67. **As per claim 15**, the combination of ARIB STD-T75, DSRC-ITS and Garinger teach wherein, when the transaction ID, in a newly received data segment, is identical to the transaction ID of a data segment that has been previously received the transaction management entity handles the newly received data segment identically to the data segment that has been previously received (In Section 4.3.3.5.2.1.1, ARIB STD-T75 discloses where sequence numbers of received data are compared in order to determine if a message has been duplicated. In the case where the message is found to be duplicated, the message is discarded.).

68. **As per claim 17**, the combination of ARIB STD-T75, DSRC-ITS and Garinger teach wherein, when the transaction ID, in a newly received data segment is identical to the transaction ID of a data segment that has been previously received, the transaction management entity handles the newly received data segment identically to the data segment that has been previously received (In Section 4.3.3.5.2.1.1, ARIB STD-T75 discloses where sequence numbers of received data are compared in order to determine if a message has been duplicated. In the case where the message is found to be duplicated, the message is discarded.).

69. **As per claim 21**, the combination of ARIB STD-T75, DSRC-ITS and Garinger teach wherein the transfer service processing entity includes a control protocol for realizing concurrent applications on the dedicated short-range communication protocol ARIB STD-T75 (Section 4.4.1.3.1 of ARIB STD-T75 discloses DSRC communication protocol.),

70. and the application sub-layer extended link control protocol ASL ELCP (Page 4, DSRC-ITS discloses Extended Link Control Protocol),

71. and the transaction management entity includes a communication protocol that intervenes between the transfer processing entity and the plurality of applications (Page 5, DSRC-ITS discloses a local port control protocol).

72. **Claims 16 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of ARIB STD-T75, DSRC-ITS, Garinger as applied to claim 1 above, and further in view of Patent 6,834,326 to Wang et al. (hereinafter Wang)

73. **As per claim 16**, the combination of ARIB STD-T75, DSRC-ITS and Garinger teach transaction management entity (Section 2.5.1, ARIB STD-T75 discloses that a MAC Sub-Layer, Layer Management Entity (LME) and System Management Entity (SME) of Layer 1 are used to exchange and manage service primitives of each layer)

74. and plurality of applications(In sections, 2.3.2.1 and 2.3.1.1, the ARIB STD-T75 discloses multiple applications and services of a communication system)

75. The combination of ARIB STD-T75, DSRC-ITS and Garinger teach do not disclose expressly: a bulk area indicating a buffer region for assembling data segments into a message, and a bulk size indicating size of the buffer region designated by an application

76. Wang discloses in Col. 15 lines 10-15, Segmentation and reassembly of data can be moved into hardware, where the hardware support can include a hardware RAID controller. Note, as disclosed in fig. 5, the Raid Controller includes disks (claimed buffer region) for stripping/interleaving data. Further, as Wang discloses in Col. 9, lines 13-31, the RAID controller will automatically determine the underlying network, the number of disks, capacity of the disks, block sizes of the disk, cache information, and other disk characterization information, where the User-supplied information includes the type of application(s) that will be run (generally, bulk data transfer, transaction processing, or hybrid) as well as the estimate on required disk capacity for each application.

77. ARIB STD-T75, DSRC-ITS, Garinger and Wang are analogous art because they are from the same field of endeavor, dealing specifically with managing communication between source and destinations.

78. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the combination of ARIB STD-T75, DSRC-ITS and Garinger, by utilizing transaction a bulk area for assembling a data message and determining a bulk size designated by an application, as suggested by Wang.

79. The rationale for doing so would have been to provide fast, scalable, high-bandwidth access to data in a communication network (Wang, Col. 1, lines 29-38)

80. Therefore, it would have been obvious to combine Wang with the combination of ARIB STD-T75, DSRC-ITS, and Garinger , for the benefit of providing a faster more scalable access to data in a communication network, to obtain the invention as specified in claim 16.

81. **As per claim 18**, the combination of ARIB STD-T75, DSRC-ITS, Garinger and Wang teach wherein the transaction management entity (section 2.5.1, ARIB STD-T75 discloses that a "MAC Sub-Layer, Layer Management Entity (LME) and System Management Entity (SME))

82. aborts a transaction having a transaction ID identical to a transaction ID (Wang discloses, Col. 12, lines 65-67, that duplicate packets are discarded, as determined by looking at the NetSCSI transaction ID and sequence number field)

83. corresponding to the port number (Paragraph 0022, Delaney discloses a connection between a client and a server is uniquely identified via an identifier of the connection including the IP addresses and TCP port numbers of the client and server.)

84. for which the corresponding application had made an abort request (Col. 26, lines 35-37, Wang discloses an abort request).

85. **Claims 19 and 22** is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of ARIB STD-T75, DSRC-ITS and patent 6,496,502 to Fite, Jr. et al. (hereinafter Fite)

86. **As per claim 19**, ARIB STD-T75 a communication system including: a plurality of mobile stations (In sections, 2.3.2.1 and 2.3.1.1, the ARIB STD-T75 discloses a communication system consisting of On-Board Equipment installed in vehicles (claimed mobile stations). See also 2.1.1, 2.1.2 and 2.1.3);

87. and a base station system communicating with the mobile stations (sections, 2.3.2.1 and 2.3.1.1, the ARIB STD-T75 discloses a road side unit (Claimed base station). See also 2.1.1, 2.1.2 and 2.1.3)

88. and providing the mobile stations with a plurality of application services through communication between the mobile stations (In sections, 2.3.2.1 and 2.3.1.1, the ARIB STD-T75 discloses multiple applications and services that the communication system is able to manage),

89. which travel on a road (sections, 2.3.2.1 and 2.3.1.1, the ARIB STD-T75 discloses a road side unit (Claimed base station). See also 2.1.1, 2.1.2 and 2.1.3),

90. and the base station system, which is installed along the road (In sections, 2.3.2.1 and 2.3.1.1, the ARIB STD-T75 discloses a communication system consisting of On-Board Equipment installed in vehicles (claimed mobile stations). See also 2.1.1, 2.1.2 and 2.1.3),

91. wherein each of the mobile stations and the base station system comprises a transfer service processing entity (Fig 4.4.1.2.1, ARIB STD-T75 discloses a layer 7 structure for the data transfer service where a Transfer Kernel element (claimed transfer processing entity) is used for data transfer services. Note, as disclosed in section 4.4.2, the layer 7 kernel provides services realized by the kernel elements needed to support several applications),

92. when a Dedicated Short-Range Communication (DSRC) connection notification is received from the sending station (Section 4.3.4.1.2.5, ARIB STD-T75 discloses where a primitive is passed from the LLC sub-layer to the layer-7 to indicate success or failure of a request to establish a connectionless-mode data transfer);

93. and a transaction management entity providing unidirectional data transmission and request-response transactions (In sections 2.4.2, as well as 3.2.7: ARIB STD-T75 discloses the methods of data transmission which includes a one way, half-duplex communication. Furthermore, in section 2.5.1, ARIB STD-T75 discloses that a "MAC Sub-Layer, Layer Management Entity (LME) and System Management Entity (SME) of Layer 1 are used to exchange and manage service primitives of each layer. Note that service primitives are used to exchange request/response type communication. A list of service primitives are disclosed in section 4.4.3.2),

94. wherein the transaction management entity of the sending station sends, and the transaction management entity includes undelivered data segment resending means for resending undelivered data segments of a message (In section 2.5.1.2, ARIB STD-T75 discloses the MAC Sub-layer, a service to resend data is provided. Also see, 2.5.2, under the heading, Communication Phase.),

95. data sending/receiving means for sending and receiving each message of a plurality of messages (In section 2.5.1.2, ARIB STD-T75 discloses the MAC sub-layer, a service to establish a link connection is provided (Association phase) to allow a base station and a mobile station to send and receive data. Also see, 2.5.2, under the heading, Association phase and Communication Phase.),

96. and message segmenting/assembling means for segmenting a message generated by an application into a plurality of data segments and assembling a plurality of data segments of a message into the message (Page 295, ARIB STD-T75 discloses that a fragmenting function is performed by the transfer kernel element of the layer 7 (claimed application) to map (claimed assemble) one transfer-SDU on plural LSDU (claimed into message)).

97. Although ARIB STD-T75 discloses transfer service processing entity (Section 4.4.2.1.2, ARIB STD-T75 discloses that a transfer kernel element (claimed transfer service processing entity) offers its services by means of service primitives, which includes a GET primitive, where as disclosed in 4.4.3.4.1, the GET primitives results in the retrieval of information from a peer application on the base station/mobile station side),

98. mobile stations (In sections, 2.3.2.1 and 2.3.1.1, the ARIB STD-T75 discloses a communication system consisting of On-Board Equipment installed in vehicles (claimed mobile stations). See also 2.1.1, 2.1.2 and 2.1.3)

99. and base station (sections, 2.3.2.1 and 2.3.1.1, the ARIB STD-T75 discloses a road side unit (Claimed base station). See also 2.1.1, 2.1.2 and 2.1.3),

100. ARIB STD-T75 does not disclose expressly: communication based on a non-network protocol

101. DSRC-ITS, on page 7 and 9 discloses that a Road-Side Unit (claimed base station) and an On-Board-Equipment (claimed mobile station) communicate using a Local Port Control (claimed non-network protocol). Also see page 5.

102. ARIB STD-T75 and DSRC-ITS are analogous art because they are from similar fields of endeavor dealing specifically with managing communications between mobile stations and base stations.

103. At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the system of ARIB STD-T75 by communicating based on non-network protocols

104. The rationale would have been to enhance reliability and flexibility for communicating between mobile and base stations by providing control functions and interfaces for a variety of applications including non-IP connections (page 5, DSRC-ITS).

105. Therefore it would have been obvious to combine DSRC-ITS with ARIB STD-T75 for the benefit of enhancing flexibility and reliability in interfacing with a variety of applications.

106. The combination of ARIB STD-T75 and DSRC-ITS do not expressly disclose: sending a list of accessible ports to a sending station, and upon receipt of the list of accessible ports, transaction start enable information to an application which has requested starting of a transaction with a port that is included in the list of accessible ports, so that the application starts the transaction,

107. Fite discloses, in Col. 2, lines 33-39, discloses that a list of egress ports for the destination station is obtained from a station list contained in a second switch. An egress port is selected from the list of egress ports based upon the source address, destination address and trunk identifier. The data frame is sent to the destination station through the selected egress port.

108. ARIB STD-T75, DSRC-ITS and Fite are analogous art because they are from the same field of endeavor, dealing specifically with managing communication of data among user and host stations.

109. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the combination of ARIB STD-T75 and DSRC-ITS by including a list of ports to establish a communication, as suggested by Fite.

110. The rationale for doing so would have been to provide high data bandwidth by allowing load balancing (Fite, Col. 2, lines 1-9)

111. Therefore, it would have been obvious to combine Fite with DSRC-ITS and ARIB STD-T75, for the benefit of providing higher data bandwidth by allowing load balancing, to obtain the invention as specified in claim 19.

112. **As per claim 22**, the combination of ARIB STD-T75, DSRC-ITS and Fite teach wherein the transfer service processing entity includes a control protocol for realizing concurrent applications on the dedicated short-range communication protocol ARIB STD-T75 (Section 4.4.1.3.1 of ARIB STD-T75 discloses DSRC communication protocol.),

113. and the application sub-layer extended link control protocol ASL ELCP (Page 4, DSRC-ITS discloses Extended Link Control Protocol),

114. and the transaction management entity includes a communication protocol that intervenes between the transfer processing entity and the plurality of applications (Page 5, DSRC-ITS discloses a local port control protocol).

115. **Claim 20** is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of ARIB STD-T75, DSRC-ITS, Fite as applied to claims 19 above, and further in view of Publication 2003/0189924 to Kadambi et al. (hereinafter Kadambi)

116. **As per claim 20**, the combination of ARIB STD-T75, DSRC-ITS and Fite teach, wherein the transfer service processing entity implements data transfer among the plurality of applications (Fig 4.4.1.2.1, ARIB STD-T75 discloses a layer 7 structure for the data transfer service where a Transfer Kernel element (claimed transfer processing entity) is used for data transfer services. Note, as disclosed in section 4.4.2, the layer 7 kernel provides services realized by the kernel elements needed to support several applications),

117. identifies an application of one of the mobile stations and the base station system as a sending source, from among the plurality of applications (Section 4.4.2.1.2, ARIB STD-T75 discloses that a transfer kernel element (claimed transfer service processing entity) offers its services by means of service primitives, which includes a GET primitive, where as disclosed in 4.4.3.4.1, the GET primitives results in the retrieval of information from a peer application on the base station/mobile station side.),

118. utilizing port numbers (Paragraph 0130, Garinger discloses using transaction IDs, wherein a transaction ID uniquely identifies each transaction by combining the source port address (claimed port number) with the ID.),

119. the transaction management entity sends (Section 2.5.1, ARIB STD-T75 discloses that a "MAC Sub-Layer, Layer Management Entity (LME) and System Management Entity (SME) of Layer 1 are used to exchange and manage service primitives of each layer.),

120. upon receipt of a Dedicated Short-Range Communication (DSRC) connection notification, transaction enable information to an application which has requested starting of a transaction, without a port number, so that the application starts the transaction (Section 4.3.4.1.2.5, ARIB STD-T75 discloses where a primitive is passed from the LLC sub-layer to the layer-7 to indicate success or failure of a request to establish a connectionless-mode data transfer. Note, ARIB STD-T75 does not send port numbers),

121. and sends a transaction abort request to the application that has started the transaction when the transaction management entity receives from a sending station, of the mobile stations and the base station system (Section 4.4.3.4.10, ARIB STD-T75 discloses sending an END application primitive (claimed abort request).),

122. The combination of ARIB STD-T75, DSRC-ITS and Fite do not expressly disclose: a notification that the port number of the application is not effective,

123. Kadambi discloses, in Paragraph 0109, that a notification message is sent to all ingress ports indicating that the destination egress port controlled by that egress manager is unavailable.

124. ARIB STD-T75, DSRC-ITS, Fite and Kadambi are analogous art because they are from the same field of endeavor, dealing specifically with managing communication of data among user and host stations.

125. At the time of the invention, it would have been obvious to a person of ordinary skill in the art modify the combination of ARIB STD-T75, DSRC-ITS, Fite, by providing a notification that the port number of the application is not effective, as suggested by Kadambi.

126. The rationale for doing so would have been to decrease delay in packet forwarding by maintaining corresponding port mappings, (Kadambi, Paragraph 0006)

127. Therefore, it would have been obvious to combine Kadambi, with ARIB STD-T75, DSRC-ITS, and Fite for the benefit of decreasing delays in a communication network, to obtain the invention as specified in claim 20.

128. **Claim 23-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of ARIB STD-T75 and Publication 2003/0033418 to Young et al. (hereinafter Young)

129. **As per claim 23**, ARIB STD-T75 teaches a method for providing a non-network wireless data transmission from a first station to a second station, the method comprising: receiving a message for a transaction from a first application running on the first station and the message is destined for a second, application running on the second station (Fig. 2.5.1, ARIB STD-T75 discloses the structure of communication wherein a first terminal on a first application sends an APDU message to a second Application on a second terminal. Note, as specified in section 4.4.1.3.2, an APDU message are exchanged between peer application service elements. Also see fig. 4.4.6.2 and fig. 4.4.6.3),

130. dividing the message into a plurality of segments (Section 4.4.6.5.1, ARIB STD-T75 discloses that APDU fragments may be mapped on one LPDU. Note, APDU fragments are mapped, thus, the APDU message is fragmented (claimed dividing the message)),

131. wherein each of the segments is identified by a sequential number corresponding to the respective segment (Fig 4.3.3.3.2.1, discloses that the LPDU message includes a sequence number);

132. generating a series of packets, wherein each of the packets includes one of the plurality of segments (Section 4.3.3.3.2.1, ARIB STD-T75 discloses fragmenting the PDU (claimed generating a series of packets)),

133. the sequential number corresponding to the respective segment (Section 4.3.3.3.2.1, ARIB STD-T75 discloses a fragmented LPDU with a corresponding sequence number),

134. transmitting the plurality of segments from the first station to the second station (Fig. 2.5.1, ARIB STD-T75 discloses the structure of communication wherein a first terminal on a first application sends an APDU message to a second Application on a second terminal. Also see fig. 4.4.6.2 and fig. 4.4.6.3);

135. and assembling the plurality of segments received to recover the message in accordance with the sequential numbers (Section 4.3.3.3.2.1, ARIB STD-T75 discloses that the sequence number is used to fragment/de-fragment (claimed assembling) data.),

136. Although ARIB STD-T75 discloses a first and second application of a first and second station (Fig. 2.5.1, ARIB STD-T75 discloses the structure of communication wherein a first terminal on a first application sends an APDU message to a second Application on a second terminal. Note, as specified in section 4.4.1.3.2, an APDU message are exchanged between peer application service elements)

137. ARIB STD-T75 does not disclose a transaction identifier, a source port number, and a destination port number, and a first and second non-TCP port.

138. Young discloses in Fig. 9, box 410, the procedures of registering an IP phone with a call agent, wherein the registration includes, a Source Port number (SP) , a Destination Port (DP) number and a Transaction ID (TID). Further, in box 460, Young discloses communicating RTP traffic using associated RTP Source Port/Destination Port number (claimed non-TCP port). Also see paragraph 0032 for more disclosure about RTP ports.

139. ARIB STD-T75 and Young are analogous art because they are from the same field of endeavor, dealing specifically with managing communications between a source and destination.

140. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify the system of ARIB STD-T75, by utilizing transaction ID's and port numbers for communication, as suggested by Young.

141. The rationale for doing so would have been providing reliable communication by ensuring that time sensitive data is forwarded correctly and efficiently (Paragraph 0049, Garinger).

142. Therefore, it would have been obvious to combine Young with ARIB STD-T75 for the benefit of providing reliable communication, to obtain the invention as specified in claim 23.

143. **As per claim 24**, the combination of ARIB STD-T75 and Young teach receiving an open port request (Paragraph 0048, Young discloses For an inbound MGCP packet with an SDP field type, the MALG opens the requested UDP port)

144. from the first application running on the first station (Fig. 2.5.1, ARIB STD-T75 discloses the structure of communication wherein a first terminal on a first application sends an APDU message to a second Application on a second terminal. Note, as specified in section 4.4.1.3.2, an APDU message are exchanged between peer application service elements. Also see fig. 4.4.6.2 and fig. 4.4.6.3),

145. wherein the open port request includes the source port number (paragraph 0046, Young discloses One RTP port, inbound or outbound, is contained in each SDP request)

146. identifying the first application (Fig. 2.5.1, ARIB STD-T75. Also see fig. 4.4.6.2 and fig. 4.4.6.3);

147. and updating a port list of the first station to include the source port number (Paragraph 0048, Young discloses the MALG stores (claimed updating) the UDP port information with the destination phone IP address 253 in the ALG lookup table).

148. **As per claim 25**, the combination of ARIB STD-T75 and Young teach: sending a packet including one of the segments from the first station to the second station; starting a timer at the first station; determining whether an acknowledgement corresponding to the packet is not received by the first station before the expiration of the timer; and retransmitting the packet from the first station to the second station if the acknowledgement corresponding to the packet is not received by the first station before the expiration of the timer (ARIB STD-T75 discloses in section 4.3.4.5.4.2.1, when the LLC transmits a command PDU, it shall start an acknowledgment timer for the transmission and increment an internal transmission count variable. If no ACn response PDU is received before the acknowledgment timer expires, the transmitting LLC shall retransmit the ACn command, increment the internal transmission count variable, and reset and restart the acknowledgment timer.).

149. **As per claim 26**, the combination of ARIB STD-T75 and Young teach, further including: receiving at the second station a packet including one of the plurality of segments; and transmitting an acknowledgement corresponding to the packet (Fig. 2.5.2, ARIB-STD T75 discloses transmitting data and receiving an acknowledgment between a first and a second station. Also see fig. 4.4.6.2 and fig. 4.4.6.3).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yosief Berhane whose telephone number is (571) 270-7164. The examiner can normally be reached at 9:00-6:00 Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pankaj Kumar can be reached at (571) 272-3011. The fax phone number for the organization where this application or proceeding is assigned is. 571-273-8300

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